

PATENT
Attorney's Matter No. 245-53722

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Ream et al.

Application No. new

Filed: November 4, 1999

For: PLANTS HAVING ENHANCED GALL
RESISTANCE AND METHODS AND
COMPOSITIONS FOR PRODUCING
SAME

Examiner: unassigned

Date: November 4, 1999

Art Unit: unassigned

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service on November 4, 1999 as First Class Mail in an envelope addressed to: BOX PATENT APPLICATION, ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231.



Attorney for Applicant

STATEMENT IN COMPLIANCE WITH 37 CFR § 1.821(f)

BOX PATENT APPLICATION
TO THE ASSISTANT COMMISSIONER FOR PATENTS
Washington, DC 20231

Sir:

In compliance with 37 CFR §1.821(f), the undersigned declares that the nucleotide and amino acid sequences presented in the paper copy of the "Sequence Listing" submitted herewith are the same as the sequences contained in the computer-readable form of said "Sequence Listing."

Respectfully submitted,

KLARQUIST SPARKMAN CAMPBELL
LEIGH & WHINSTON, LLP

By



Paula A. DeGrandis
Registration No. 43,581

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 226-7391
Facsimile: (503) 228-9446

SEQUENCE LISTING

<110> Ream, Walt et al.,
<120> Plants Having Enhanced Gall Resistance and
Methods and Compositions for Producing the Same
<130> 53629
<140>
<141>
<150> 60/107,185
<151> 1998-11-05
<160> 12
<170> PatentIn Ver. 2.0
<210> 1
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 1
cgggatccat gtcatgaacc ttccttgc aac 33

<210> 2
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 2
cgggatccctg cgactcata 19

<210> 3
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 3
gaagatctga tcatggactg aatctaattt tcggtcc 37

<210> 4
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 4

gaagatctga tcactaatac attccgaacg g

31

<210> 5
<211> 747
<212> DNA
<213> Agrobacterium tumefaciens

<400> 5
gaagatctga tcatggactg aatctaattt tcgggtccaa ttgcacagga aagacgacga 60
cccgatagc ttttgcggcag cagacaggc ttccagtctt ttcgcttgat cgggtccaaat 120
gctgtctca actatcaacc ggaaggcgac gaccaacagt ggaagaactg aaaggaaacga 180
cgctgtctca ctttgcgtat cggccctctgg tggagggtat catcgaccc aagcaagctc 240
atcataggct gatcgaggag gtgtataatc atgaggccaa cggcgggctt attcttgagg 300
gaggatccac ctgcgttgc t aactgcatttgg cgcgaaacag ctattggagt gcagattttc 360
gttggcatat tatttcggc aagttaaccg accaagagac cttcatgaaa gcccggcaagg 420
ccagagttaa gcagatgttgc caccggctg caggccattt tattttcaa gagttgggtt 480
atctttggaa tgaacctcg tctgaggccaa ttctgaaaga gatcgatgga tatcgatatg 540
ccatgttgtt tgctagccag aaccagatca cggcagatat gctattgcag ctgcacgcaa 600
atatggaaagg taagttgatt aatggatcg ctgcaggatg tttcatccat gcccggcaac 660
aggaacacgaa attcccccaa gttAACGCG cggctttcg a cggattcgaa ggtcatccgt 720
tcggaaatgtt ttagtgcgtatc gatcttc 747

<210> 6
<211> 2
<212> PRT
<213> Agrobacterium tumefaciens

<400> 6
Met Asp
1

<210> 7
<211> 1807
<212> DNA
<213> Agrobacterium tumefaciens

<400> 7
cgggatccat gtcgttgc aaccagtgcg atcatctccc aaccaaaatg 60
gtggatctga caatggcgtca taaggccgtt gaattggacc gcagggtttc cgatgccttc 120
ttagaacgag aagcttcttag gggaaaggagg attactcaaa gctccaccga gtgcagcgct 180
gggttagctt gcaaaaggctt ggccgtatggt cgcttccccg agatctcagc tgggtggaaag 240
gtagcagttc tctccgttta tatctatatt ggcggaaat ttctggggcg gataacttggaa 300
tcgaaacctt gggcgccggc aacagtggat ggtctcggtt ccattcgactt ggacaccattt 360
tgcgttgcatt tctccgtca acaactaattt caagccctgt ttttgcgtt gggtaaaaga 420
tgtgcaccga ttgtatcttag tcatttcgtt ggcatttcaa tctctaaagac tgccggctt 480
cgaacccttc caatggcgtt gtacgagaat ggcacgttga aatgcgttac cgggtttacc 540
ataacccttgc aaggggccgtt gccatttgcg atggtagctt atggcgaaa cctgtatgtt 600
aagggttcgg caggttccctt tccaaacaatc gacttgcgtt acgactgcag accgtttttt 660
gaccaatgtt ccgtatgtgg acggatcggtt ttctttccgg aggatgttcc taaggccaaa 720
gtggccgtca ttggcgctgg cattttccgg a ctcgtgggg caaacgaaact gcttcgtt 780
ggggtagacg atgttacaat atatgaagca agtgcgttgc tggaggccaa gctttgttca 840
catgtttca ggacgttcc tagtgcgtt ggcggaaatgg gggcgatgcg atttccctt 900
gctgcattttt gcttgcattt cttccgttgcgat ctttgcgttgc ttttgcgtt gaggccgtt 960
ccaaatcccg gcacagtgcg cacttacttgc gtctaccaag ggcgttccaaat catgtggaaa 1020
gccggccggc tggccaccgaa gctgttccat cgcgttttaca acgggtggcg tgcgttctt 1080
aaggacgggtt ttcatgagcg agatattgtt tggcgttgc cttgtcgat ttttgcgtt 1140
ttgaaatcag gacacatttgc gttggcgttgc gactccttgc aaatttggctt gacccgtt 1200
gggaggaggtt ctttcttcc agggatagag aggttccat tggcgttgc cttgtcgat ttttgcgtt 1260
ggttaacatg gatgtttccat gatgttgc gacatttgc gactccttgc aaatttggctt gacccgtt 1320
gcgggggttgc gtcgtttt tggaaacggg tttatttgcgtt ggtcatcaac 1380

ggatatacgaaaaaatcagcg gatgtccctt gaaggaaatct cagaacttcc acgtcgatc 1440
gcatctgaag tggtaacgg tggctctgtg agccagcgca tatgcctatgt tcaagtcaagg 1500
gcgattcaga agaaaaagac aaaaataaaatgataaggctta agagcgggat atctgaactt 1560
tatgataagg tgggtgtcac atctggactc gcaaataatcc aactcaggca ttgcctgaca 1620
tgcgatatacca atattttca ggcaccaggta accaagcggg ttgataaacag ccatatgaca 1680
ggatcgtaa aactcttcct gatgactgaa cggaaattct ggttagacca tatcctcccg 1740
tcttgttcc tcatggacgg gatcgaaaaa gcagtgattt gcctggacta tgagtgcag 1800
gatccccg 1807

<210> 8

<211> 2

<212> PRT

<213> Agrobacterium tumefaciens

<400> 8

Met Ser

1

<210> 9

<211> 2544

<212> DNA

<213> Agrobacterium tumefaciens

<400> 9

gaagatctga tcatggactg aatctaattt tcggtccaaat ttgcacagga aagacgacga 60
ccgcgatagc tcttgcctcag cagacaggcc ttccagtccct ttcgcttgcat cgggtccaaat 120
gctgtccctca actatcaacc ggaagcggac gaccaacagt ggaagaactg aaaggaacga 180
cgcgtctcta ccttgcgtat cggcctctgg tggagggtat catcgaccc aagcaagctc 240
atcataggct gatcgaggag gtgtataatc atgaggccaa cggcgggctt attcttgagg 300
gaggatccat gtcatgaacc tctccctgtat aaccagtgcg atcatctccc aaccaaaatg 360
gtggatctga caatggtcga taaggccgat gaattggacc gcagggttcc cgatgccttc 420
ttagaacgag aagcttctag gggaaaggagg attactcaaa gctccaccga gtgcagcgct 480
gggttagctt gcaaaaggct ggccgatggc cgcttccccg agatctcagc tggtgaaaag 540
gtagcagttc tctccgttata tatctatatt ggc当地agaaa ttctggggcg gatacttgaa 600
tcgaaacctt gggcgcgggc aacagtggat ggtctcggtt ccattcgactt ggacaccatt 660
tgcattggatt tctccgaacg acaactaatc caagccctgt ttttgcgtat cggtaaaaaga 720
tgtgcaccga ttgatcttag tcattcgtg gccatttcaa tctctaagac tgccggctt 780
cgaaccctgc caatggcgt gtacgagaat ggc当地gatga aatgcgttac cgggttacc 840
ataacccttg aaggggccgt gccatttgac atggtagctt atggtcgaaa cctgatgctg 900
aagggttcgg caggttctt tccaaacaatc gacttgcctt acgactgcag accgttttt 960
gaccaatgtt cc当地atgtgg acggatcgcc ttcttccgg aggatgttcc taaggccaaa 1020
gtggcggtca ttggcgctgg cattttccggc ctcgtgggtt caaacgaact gcttcatgct 1080
ggggtagacg atgttacaat atatgaagca agtgc当地gtt ggaggcaat gctttgtca 1140
catgcttca gggacgctcc tagtgc当地gtt gccgaaatgg gggc当地gtccg atttccctt 1200
gctgcattct gcttgc当地ttt ct当地ccctcgag cgatcggcc tgc当地tgc当地t gaggccgtt 1260
ccaaatcccg gc当地atgtcg cacttacttg gtctaccaag gcttccaaata catgtgaaa 1320
gccggcggc gtc当地accgaa gctgtccat cgc当地tttaca acggatggcg tgc当地tctt 1380
aaggacgggtt ttcatgagcg agatattgtt ttggcttccg ctgtgc当地t tactualcaggcc 1440
ttgaaatcag gacacattag gtgggctcat gactccttgc aaatttggct gaaaccgtt 1500
gggaggggagt ccttcttcc agggatagag aggttcc tgggc当地aca tcctccctgg 1560
ggttaacatg gagtttccat catgattggg acctattcaa gctaatggg ataggatgt 1620
gcgggggtt gtc当地gtt ttgaaagcggg ttatttggaa tcctccctt ggtcatcaac 1680
ggatatacgaa aaaaatcagcg gatgtccctt gaaggaaatct cagaacttcc acgtcgatc 1740
gcatctgaag tggtaacgg tggctctgtg agccagcgca tatgcctatgt tcaagtcaagg 1800
gcgattcaga agaaaaagac aaaaataaaatgataaggctta agagcgggat atctgaactt 1860
tatgataagg tgggtgtcac atctggactc gcaaataatcc aactcaggca ttgcctgaca 1920
tgcgatatacca atattttca ggcaccaggta accaagcggg ttgataaacag ccatatgaca 1980
ggatcgtaa aactcttcct gatgactgaa cggaaattct ggttagacca tatcctcccg 2040
tcttgttcc tcatggacgg gatcgaaaaa gcagtgattt gcctggacta tgagtgcag 2100
gatccaccc tggctcaac tgc当地tggcgcc gaaacagctt ttggagtgca gattttcg 2160

ggcatattat tcgccacaag ttacccgacc aagagacctt catgaaagcg gccaaggcca 2220
gagttaaagca gatgttgcac cccgctgcag gccattctat tattcaagag ttggtttatc 2280
tttgaatga acctcggctg aggccatcc tgaaagagat cgatggatat cgatatgcca 2340
tgttgttgc tagccagaac cagatcacgg cagatatgtt attgcagctt gacgcaaata 2400
tggaaaggtaa gtgattaat gggatcgctc aggagtattt catccatgcg cgccaaacagg 2460
aacagaaatt cccccaaagt aacgcagccg cttdcgacgg attcgaaggt catccgttcg 2520
aatgttataa gtgatcagat cttc 2544

<210> 10
<211> 2268
<212> DNA
<213> Agrobacterium tumefaciens

<400> 10
atgtcagctt cacctctcct tgataaccag tgcgatcatc tcccaaccaa aatggtgat 60
ctgacaatgg tcgataaggc ggatgaattt gaccgcaggg tttccgatgc cttcttagaa 120
cgagaagctt cttagggaaag gaggattact caaagctcca ccgagtgcag cgctgggtt 180
gcttgcaaaa ggctggccga tggtcgttc cccgagatct cagctggatgg aaaggtagca 240
gttctctccg ctatatactt tattggcaaa gaaattctgg ggcggatact tgaatcgaaa 300
ccttgggcgc gggcaacagt gagtgttctc gttgccatcg acttggacac catttgcac 360
gatttctccg aagcacaact aatccaagcc ctgttttgc tgagcgttta aagatgtca 420
ccgattgatc ttatgttatt cgtggccatt tcaatctcta agactgcggg ctttcgaacc 480
ctgccaatgc cgctgtacga gaatggcacg atgaaatgcg ttaccgggtt taccataacc 540
cttgaagggg ccgtgcccatt tgacatggta gcttatggtc gaaacctgtt gctgaagggt 600
tcggcagggtt ccttccaac aatcgacttgc ctctacgact gcagaccgtt ttttgcacca 660
tggccgata gtggacggat cggcttctt ccggaggatg ttcctaagcc gaaagtggcg 720
gtcattggcg ctggcatttc cggactcgatg gtggcaaaacg aactgcttca tgctgggtt 780
gacgatgtt caatataatga agcaagtgtt cgtgttggag gcaagctttt gtcacatgtt 840
ttcaggggacg ctccatgtt cgtggccgaa atggggggcga tgcattttcc tcctgctgca 900
ttctgcttgc ttatgttattt ctagcgttac ggcctgttcc ctagtggaggcc gttcccaat 960
ccggcacaatc tcgacactta ctggcttac caaggcgatcc aatacatgtt gaaagccggg 1020
cagctgcccac cgaagctgtt ccatcgatgtt tacaacgggtt ggcgtgcgtt cttgaaggac 1080
ggttttcatg agcgagatat tgggttgcgtt tggccctgtcg ctattactca ggccttgaaa 1140
tcaggacaca ttaggtggc tcatgactcc tggcaaaattt ggctgaaccg tttcgggagg 1200
gagtccttctt cttagggat agagaggatc tttctggca cacatcctcc tgggtttaaa 1260
catggagttt tcctcatgtt tgggacctat tcaagcttaat gggaaatagga tctggccggg 1320
tttggccatg ttttggaaatc cgggtttattt gagatcctcc gcttggatcat caacggatat 1380
gaagaaaaatc agcgatgtt ccctgaagga atctcagaac ttccacgtcg gatcgatct 1440
gaagtggatc acgggtgtc tggatggccag cgcataatgcg atgttcaagt cagggcgatt 1500
cagaaggaaa agacaaaaat aaagataagg cttaaagagcg ggatatctga actttatgtt 1560
aagggtgggg tcacatctgg actcgaaat atccaaactca ggcattgcct gacatgcgt 1620
accaatattt ttcaaggcacc agtgaaccaa gcgggttgcata acagccatata gacaggatcg 1680
tcaaaaactct tcctgatgac tgaacaaaa ttctggtttag accatatcct cccgtcttgc 1740
gtcctcatgg acggatcgatc aaaacggatgt tattgcctgg actatgagtc gcaggatccg 1800
aatggtaaaat gtcgttgcgtt catcgatattt acatggggagg acgactccca caagctgtt 1860
gcggcccccg acaaaaaaaa ggcattatgt ctgctgcggg acgcaatttc gagatcttc 1920
ccggcgttttgc cccagcacctt atttcctgc tgcgttgcattt acgacccaaa tgggtttaaa 1980
catgattggc ttacagacga gaatggccggg ggagctttca aactcaacccg gcgtgggtgag 2040
gatttttattt ctgaagaact tttcttcaa gcactggaca cggctaatga taccggatgtt 2100
tacttggccgg gttgcgttgc ttccatcaca ggtggatggg tggagggtgc tattcagacc 2160
gcgtgttaacg ccgtctgtgc aattatccac aattgtggag gcattttggc aaagggaat 2220
cctctcgaaac actcttggaa gagatataac taccgcagta gaaattag 2268

<210> 11
<211> 1404
<212> DNA
<213> Agrobacterium tumefaciens

<400> 11
atggtgccca ttacctcgat agccaaatgc ctagaacacc tggaaacggaa agactactcc 60
tgcttagaaatc tagtagaaatc tctgtatgcg cttgtgttgc gtcggatgttcc attaaacggcc 120

cttctggcta cagactggga tggtttgcgg cgaagcgcca aaaaaattga tcgcccattgga 180
aacgccggag taggtctttt cgccattcca ctctgttttta agggaaacat cgctaccggc 240
gtatccc caagcgccgc tacgcggcg ctgataaacc acttgccaaa gataccatcc 300
cgcgtcgca aagactttt tttagtgcga gcactgcccgg gtgcctcggg aaatatgc 360
gagttatcgat ttggaaattac aagcaacaac tatgccaccg gggcggtgcg aaacccgtgg 420
aatccagatc tgataccagg gggctcaagc ggtgggtgtt ctgctgcgt agcaagccga 480
ttgatgttag gcggcatagg caccgatacc ggtgcattcg ttgcctacc cgccgcctg 540
tgtggcgtag taggatttcg accgacgctt ggtagatatac cgggagatcg gataataccg 600
gttagcccta cccggacac tccggaaatc atagcgcagt gcttagccga tggtaatc 660
ctcgaccgga taatttccgg cacaccggag agaataaccac ccgtgcgcgt gaaggggcta 720
aggatcgcc tccctacaaac ctactttat gatgacccgtt atgctgtatgt ggccctagca 780
gctgaaacaa cgattcgct gctagcaaac aaaggcgtaa cttttgttga agctaacatt 840
ccccaaacttgc acgaactgaa taaaggggcc agcttcccag ttgcactcta tgaatttcca 900
cacgctctaa aacagtatct cgacgacttt gtaaaaactg tttcttttc tgacgtcattc 960
aaaggaattc gttagccctga ttagccaaac attgccaatg cgccaaattga tggacatcaa 1020
atttccaaag ctgaatatga actggccgc cactccttca gaccaagact tcaagccacc 1080
tatcgcaact acttcaaact gaatagatta gatgctattc tcttccaaac agcaccctt 1140
gtggccagac ccataggctca ggattcctca gttatccaca atggcacat gctggacaca 1200
ttcaagatct acgtgcgaaa tggaccca acgacaaacg caggcctacc tggcttgagc 1260
attcctgttt gcctgacacc tgatgcatttgc cctgttggaa tggagatcg tggatttagcg 1320
gattcagacc aacgtctgtt agcaatcgaaa gggcattttt aagaagccat tggattccga 1380
tattttgcg gtttacccaa ttaa 1404

<210> 12

<211> 723

<212> DNA

<213> Agrobacterium tumefaciens

<400> 12

atggacacctgc atctaattttt cggtccaaact tgcacaggaa agacgacgac cgcgatagct 60
cttgcccaggc agacagggtt tccagtcatt tcgcttgc gggtccaaatg ctgtccctaa 120
ctatcaaccg gaagcgccgc accaacagtg gaagaactga aaggaacgc gctgtcttac 180
cttgatgatc ggctctgggt ggagggtatc atcgcagccca agcaagctca tcatagctg 240
atcgaggagg tggataatca tgaggccaaac ggcggctta ttcttgaggg aggtccacc 300
tcgttgctca actgcattgc gcgaaacagc tattggatgt cagattttcg ttggcatatt 360
attcgccaca agttacccga ccaagagacc ttcatgaaag cggccaaaggc cagagttaa 420
cagatgttgc accccgctgc aggccattct attattcaag agttggttt tctttgaat 480
gaacctcgcc tgaggccat tctgaaagag atcgatggat atcgatatgc catgttggat 540
gctagccaga accagatcac ggcagatatg ctattgcagc ttgacgcataa tatggaaagg 600
aagttgatta atggatcgatc tcaggatgt ttcatccatg cgcgcacaa ggaacagaaa 660
ttcccccaag ttaacgcagc cgcttcgcac ggattcgaag gtcatccgtt cgaaatgtat 720
tag 723